

# Work Order ID 93298

November-15-12 12:38:43 PM

\*93298\*

Page 1

Item ID: D6101-015

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: Saddle Billet

Start Date: 15/11/2012 Start Qty: 10.00

\*10\*

Cust Item ID:

Required Date: 30/11/2012 Req'd Qty: 10.00

\*10\*

Customer:

Reference:

Approvals: Process Plan: *MCS* Date: *12-11-15* Tooling:

Date:

Run Start \*NR1\*

QC: Date: SPC (Y/N):

Date:

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
----------	--------------

D6101	B
-------	---

100		0.00
-----	--	------

\*100\*

PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O: *18441*

- a) Description: Alluminum billet
- b) 9.450" x 6.250" x 2.50" thick (+0.030 / -0.000)
- c) Tolerance on all dimensions are +0.030/-0.000"
- d) Grain direction along 9.450" length
- e) Material: 7075-T7351 (QQ-A-250/12)
- f) Material certification required

*CL 12/11/19 10*

110	Receive & Inspect for Damage & Mat'l Certs	0.00
-----	--	------

\*110\*

Packaging

Memo

0.00

Packaging

Ensure material certification is attached

*P 12/14 7 (10)*

# Work Order ID 93298

November-15-12 12:38:43 PM

**\*93298\***

Page 2

Item ID: D6101-015

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Item Name: Saddle Billet

Stop **\*NS2\***

Start Date: 15/11/2012 Start Qty: 10.00

**\*10\***

Cust Item ID:

Required Date: 30/11/2012 Req'd Qty: 10.00

**\*10\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 <b>*120*</b> QC Quality Control	QC6- Inspect dimensions to drawing  Memo Ensure Material certification comply to Dwg D6101	0.00  0.00		<i>amb 12/12/10</i>		<i>10</i>	<i>0</i>		
130 <b>*130*</b> Packaging Packaging	Identify as per dwg & Stock Location: <i>MAT 41</i>  Memo	0.00  0.00		<i>FK 12/12/10</i>		<i>10</i>	<i>0</i>		
140 <b>*140*</b> QC Quality Control	QC21- Final Inspection - Work Order Release  Memo	0.00  0.00							<i>12/12/10</i> <i>mk</i> <i>12-12-10</i>

# Picklist Print

November-15-12 12:38:47 PM

Page 1  
T

Work Order ID: 93298

\*93298\*

Parent Item: D6101-015

\*D6101-015\*

Parent Item Name: Saddle Billet

Start Date: 15/11/2012

Required Date: 30/11/2012

Start Qty: 10.00

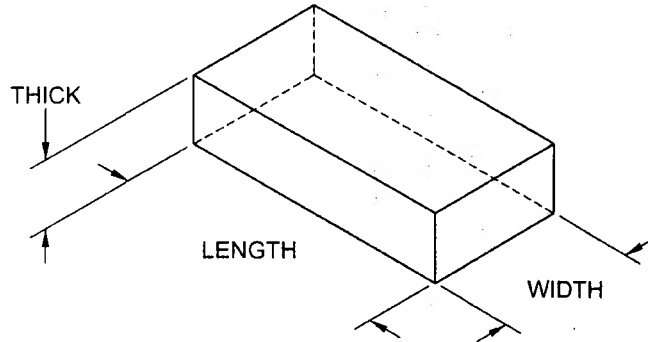
Required Qty: 10.00

Comments: IPP RevA: New issue DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6101-015P		Purchased	No			110	Each	0.0000	1	10			
*D6101-015P*									**				
ALUM BILLET													

12/12/12  
(10)

# SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

**B** ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

**RELEASED**  
09/07/15/W

12-11-15  
93298 MGS  
ORDER  
NOTICE  
TO AMENDMENT  
COPY  
TO  
DRAWING  
DART AEROSPACE LTD  
COPY

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D6101	SHEET 1 OF 1
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SADDLE BILLET, 7075	NTS
DATE	09.04.23	COPYRIGHT © 2001 BY DART AEROSPACE LTD	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			

**Castle Metals®**

A. M. Castle &amp; Co.

## BORDEREAU DE MARCHANDISES

Page 1 of 2

No de Formulaire d'Emballage / Shipment No:1565010

<b>Expédié de / Ship From:</b>		<b>Vendu à / Sold To:</b>		<b>Expédié à / Ship To:</b>		<b>Livré à / Deliver To:</b>	
A. M. Castle & Co. (Canada) Inc. MONTREAL - CASTLE METALS 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
<b>Date d'expédition / Date Shipped</b>	<b>F.O.B.</b>	<b>Modalités de transport / Freight Terms</b>		<b>Transporteur / Carrier</b>		<b>No du Bon de connaissance / BOL No</b>	
06-DEC-2012	ORIGIN	Prepaid		MANITOULIN		1565010-2	

<b>Détails d'expédition / Shipment Details</b>	<b>Destination finale / Final Destination Branch - MON</b>
--	--

N° de commande / Order No		N° de ligne Line No		N° d'article / Item No		Description									
2550929		2		752241.MO		2.5000.PL.7075.T7351.ALUMINUM.USI.48.5000.144.5000 CUT 2SIDED TO 6.25 IN ( ) X 9.45 IN ( ) SPECIFICATIONS: SHIP AS SOON AS REC'D QQ-A-250/12 GRAIN ALONG 9.45"									
N° de bon de commande / Purchase Order No		Nbre de pièces / Part Number		Qté commandée / Ordered Qty		Qté Facturée / Invoice Qty									
18441		YOUR ITEM NUMBER: D6101-015		10.00 PCS		10.00 PCS									
Détails / Details		SHIP AS SOON AS REC'D QQ-A-250/12 GRAIN ALONG 9.45"													
N° de livraison / Delivery No :		Usine / Mill		No de coulée / Heat Number		Code méc / Mech Id		Pièce s / PCS		Largeur (Pouce)/ Width (IN)		Longueur (Pouce)/ Length (IN)		Qté expédiée/ Shipped Qty(LBS)	
118210764		MATERIALS TECHNOLOG Y		585746A1				10						152.7121	

**Castle Metals®**

A. M. Castle &amp; Co.

**BORDEREAU DE MARCHANDISES**

Page 2 of 2

<b>SOLUTIONS</b>							
<p>Ces marchandises/technologies sont sujettes aux règlements de l'Export Administration et du département d'état des États-Unis. Si elles ont été/sont exportées, elles doivent se conformer à ces règlements. Toute modification du contrat de transport contraire aux lois des États-Unis est interdite.</p> <p>These commodities/technologies are subject to US Export Administration &amp; US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.</p> <p>Nous certifions par la présente que le matériel couvert par cette certification est conforme aux spécifications susmentionnées et aux exigences applicables pour le matériel, y compris toute spécification faisant partie de la description. Les rapports d'essai sont archivés pour fins de consultation. Toute requête concernant du matériel défectueux sera rejetée à moins qu'elle ne soit faite par écrit à A. M. Castle &amp; Co. dans les 60 jours suivant la livraison. Le matériel coupé sur mesure ou coupé par le client ne peut être retourné pour crédit.</p> <p>We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle &amp; Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.</p>							
Ce matériel a été reçu et inspecté par Reviewed by Authorized Castle Metals Representative:					Date:	Name:	

Item 752241-30 Po 17425 2 pages

SHIP TO:  
HADCO METAL TRADING CO. LLC  
2811 CHARTER RD  
PHILADELPHIA, PA 19154

SOLD TO:  
HADCO METAL TRADING CO. LLC  
2811 CHARTER RD  
PHILADELPHIA, PA 19154

**KAISER  
ALUMINUM**

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

# CERTIFIED TEST REPORT

Serial Number  
4267982

CUSTOMER PO NUMBER: 034072		WORK PACKAGE:		CUSTOMER PART NUMBER:		SHIP RUN/LOAD: 102353/17		GOV'T CONTRACT NUMBER:	
KAISER ORDER NO: 1131482	LINE ITEM: 2	SHIP DATE: 29-JUN-2012	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: Sawed Plate			
WEIGHT SHIPPED: 5820 LB	QUANTITY: 3 PCS EST.	B/L NUMBER: 2037708		GAUGE: 2.5000 IN	DIAMETER/WIDTH: 51.500 IN		LENGTH: 147.000 IN		

MHU 1589898: LOT 585746A1: 2 pieces;  
MHU 1589897: LOT 585746A1: 1 pieces;

## Certified Specifications

AMS 4078/RevJ  
ASTM B 209/Rev10  
BSS 7065/RevA  
GAMPS 9101/RevB  
PS 21211/RevL

AMS-QQ-A-250/12  
ASTM B 594/Rev09  
CSTI 008/RevD  
GSS16100/RevG/Amd1

AMS-STD-2154/Rev98  
BAC 5439/RevH  
DPS 4.713/RevAH  
MMS 159/RevT

Test Code: 4287

## Test Results

Lot: 585746A1 Cast 468

Drop 14

Ingot 2

Melted in USA

(ASTM E8/B557)  
(EN 2002-1)

Tensile:	Temper T7351	Dir / # Tests LT / 2 (Min:Max)	Ultimate KSI (MPA) 70.3 : 70.8 (485 : 488)	Yield KSI (MPA) 58.8 : 59.6 (405 : 411)	Elongation % 11.9 : 12.1
----------	-----------------	-----------------------------------	--	---	-----------------------------

(ASTM E1004)  
(EN 2004-1)

Conductivity %IACS :	40.9 Min	41.2 Max
(MS/M) :	23.7 Min	23.9 Max

(ASTM E1261)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.07	0.16	1.5	0.02	2.5	0.21	5.6	0.03	0.01	0.01	TOT 0.05

0.05  
0.01  
0.01  
0.03  
5.6  
2.5  
0.21  
0.02  
1.5  
0.16  
0.07

# KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number  
4267982

### ALLOY LIMITS

7075	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
MIN(wt%)	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX(wt%)	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

### TEST NOTES

Metal represented by this test report was 100% immersion  
ultrasonically tested from one side with 3mm dead zones top  
and bottom and meets the Class A and Class B requirements of  
all specifications referenced on this test report. No  
surface marking of sonic indications is performed.

### Castle Metals Men

HEAT NUMBER 585746A1  
MECHANICAL ID \_\_\_\_\_  
ITEM CODE 752241-B0  
LOT NUMBER 2796235MON  
PO NUMBER 17425  
RECEIPT DATE 12-6-12  
SUPPLIER MTL  
SPECIFICATION AMS-QQ-A-250/12  
LCS \_\_\_\_\_  
COMMENT \_\_\_\_\_  
APPROVED [Signature]

OK  
12/12/10

### CERTIFICATION

KAISER ALUMINUM FABRICATED PRODUCTS, LLC (KAISER) HEREBY CERTIFIES THAT METAL SHIPPED UNDER THIS ORDER WAS MELTED IN THE UNITED STATES OF AMERICA OR A QUALIFYING COUNTRY PER OFARS 225.872-1(a), WAS MANUFACTURED IN THE UNITED STATES OF AMERICA, AND MEETS THE REQUIREMENTS OF OFARS 252.225 FOR DOMESTIC CONTENT. THIS MATERIAL HAS BEEN INSPECTED, TESTED, AND FOUND IN CONFORMANCE WITH THE REQUIREMENTS OF THE APPLICABLE SPECIFICATIONS AS INDICATED HEREIN. ALL METAL WHICH IS SOLUTION HEAT TREATED COMPLES WITH AMS 2772. ANY WARRANTY IS LIMITED TO THAT SHOWN ON KAISER'S STANDARD GENERAL TERMS AND CONDITIONS OF SALE. TEST REPORTS SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF KAISER ALUMINUM FABRICATED PRODUCTS, LLC LABORATORY. THE RECORDING OF FALSE, FICTITIOUS, OR FRAUDULENT STATEMENTS OR ENTRIES ON THE CERTIFICATE MAY BE PUNISHED AS A FELONY UNDER FEDERAL LAW. 180-9001-2000 CERTIFIED.

*James Hemenway*

JAMES HEMENWAY, LABORATORIES SUPERVISOR